



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

③

D407-667-105TRN
Job Sheet 202844



Part No: D407-667-105TRN

Job Qty: 1 pcs

Part Name: Crosstube Turning Detail



Part Weight: 0 lbs

Status: New

Priority: Medium

Job Created: 11/4/19

Job Tracking No:

Due Date: 11/29/19

Created By: Marie Lajeunesse

Type: Stock

Description:

Note: DWG D407-667-145 REV.D IPP Rev:a 08.02.28 new issue EC IPP Rev B 08.04.02 Removed polish EC verified by: DD

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Lead Time	DAS	Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier				
100	Mori Seiki TL-40 - 1	1 pcs	11/29/19	11/29/19	1.00	1.25	Mori Seiki TL-40 - 1			66	2019/11/07
110	QC 2	1 pcs	11/29/19	11/29/19	0.00	0.00	QC 2 - 1			9-89	
							QC 2 - 12				
							QC 2 - 14				
							QC 2 - 17				
							QC 2 - 19				
							QC 2 - 2				
							QC 2 - 20				
							QC 2 - 22				
							QC 2 - 23				
							QC 2 - 25				
							QC 2 - 32				
							QC 2 - 33				
							QC 2 - 35				
							QC 2 - 39				
							QC 2 - 4				
							QC 2 - 40				
							QC 2 - 44				
							QC 2 - 45				
							QC 2 - 48				
							QC 2 - 49				
							QC 2 - 50				
							QC 2 - 51				
							QC 2 - 52				
							QC 2 - 57				
							QC 2 - 62				
							QC 2 - 63				
							QC 2 - 8			DAS	
							QC 2 - 66			66	2019/11/07
							QC 2 - 64			9-89	

				QC 2 - 65	
				QC 2 - 5	
				QC 2 - 71	
				QC 2 - 73	
				QC 2 - 69	
120	Mori Seiki TL-40 - 1 - B4B	1 pcs	11/29/19	1.00 1.12	Mori Seiki TL-40 - 1 - B4B
130	QC 2	1 pcs	11/29/19	0.00 0.00	QC 2 - 1
					QC 2 - 12
					QC 2 - 14
					QC 2 - 17
					QC 2 - 19
					QC 2 - 2
					QC 2 - 20
					QC 2 - 22
					QC 2 - 23
					QC 2 - 25
					QC 2 - 32
					QC 2 - 33
					QC 2 - 35
					QC 2 - 39
					QC 2 - 4
					QC 2 - 40
					QC 2 - 44
					QC 2 - 45
					QC 2 - 48
					QC 2 - 49
					QC 2 - 50
					QC 2 - 51
					QC 2 - 52
					QC 2 - 57
					QC 2 - 62
					QC 2 - 63
					QC 2 - 8
					QC 2 - 66
					QC 2 - 64
					QC 2 - 65
					QC 2 - 5
					QC 2 - 71
					QC 2 - 73
					QC 2 - 69
140	QC 8	1 pcs	11/29/19	0.00 0.00	QC 8 - 12
					QC 8 - 14
					QC 8 - 17
					QC 8 - 20
					QC 8 - 25
					QC 8 - 3
					QC 8 - 32
					QC 8 - 33
					QC 8 - 35
					QC 8 - 39
					QC 8 - 4
					QC 8 - 44
					QC 8 - 45
					QC 8 - 49
					QC 8 - 58
					QC 8 - 8
					QC 8 - 9
					QC 8 - 68
					QC 8 - 67

DAS
66 2019/11/11
9-89

DAS
66 2019/11/19
9-89

					QC 8 - 1 (A)	
					QC 8 - 47	
					QC 8 - 40	
					QC 8 - 52	
					QC 8 - 23	
					QC 8 - 57	DAS
					QC 8 - 76	76
					QC 8 - 61	9-89
145 Crosstubes - 2 - B4B	1 pcs	11/29/19	0.00 0.36		Crosstubes - 1 - B4B	
					Crosstubes - 2 - B4B	ISB 11/22/2019
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
150 Crosstubes - 3 - B4B	1 pcs	11/29/19	0.00 0.40		Crosstubes - 1 - B4B	BEB 19-11-25
					Crosstubes - 2 - B4B	
					Crosstubes - 3 - B4B	
					Crosstubes - 4 - B4B	
160 QC 7	1 pcs	11/29/19	0.00 0.00		QC 7 - 10	
					QC 7 - 13	
					QC 7 - 14	
					QC 7 - 15	
					QC 7 - 17	
					QC 7 - 18	
					QC 7 - 19	
					QC 7 - 2	
					QC 7 - 28	
					QC 7 - 3	
					QC 7 - 30	
					QC 7 - 34	
					QC 7 - 36	
					QC 7 - 37	
					QC 7 - 41	
					QC 7 - 47	
					QC 7 - 48	
					QC 7 - 51	
					QC 7 - 58	
					QC 7 - 59	
					QC 7 - 60	
					QC 7 - 9	
					QC 7 - 68	
					QC 7 - 50	
					QC 7 - 67	
					QC 7 - 40	
					QC 7 - 24	
					QC 7 - 43	
					QC 7 - 61	DAS
					QC 7 - 81	76
					QC 7 - 76	9-89
					QC 7 - 79	
170 Packaging 3-1 - Stock - B4B	1 pcs	11/29/19	0.00 0.00		Packaging 3 - 1 - B4B	
					Packaging 3 - 2 - B4B	
					Packaging 3 - 3 - B4B	
					Packaging 3 - 4 - B4B	
					Packaging 3 - 5 - B4B	
					Packaging 3 - 6 - B4B	
					Packaging 3 - 7 - B4B	
					Packaging 3 - 8 - B4B	
					Packaging 3 - 9 - B4B	
					Packaging 3 - 10 - B4B	
					Packaging 3 - 11 - B4B	

				Packaging 3 - 12 - B4B	
				Packaging 3 - 13 - B4B	
				Packaging 3 - 14 - B4B	
				Packaging 3 - 15 - B4B	
				Packaging 3 - 16 - B4B	
				Packaging 3 - 17 - B4B	
				Packaging 3 - 18 - B4B	
				Packaging 3 - 19 - B4B	
				Packaging 3 - 20 - B4B	
				Packaging 3 - 21 - B4B	
				Packaging 3 - 22 - B4B	
				Packaging 3 - 23 - B4B	
				Packaging 3 - 24 - B4B	133 11/25/2019
				Packaging 3 - 25 - B4B	
				Packaging 3 - 26 - B4B	
				Packaging 3 - 27 - B4B	
				Packaging 3 - 28 - B4B	
				Packaging 3 - 29 - B4B	
				Packaging 3 - 30 - B4B	
				Packaging 3 - 31 - B4B	
				Packaging 3 - 32 - B4B	
				Packaging 3 - 33 - B4B	
				Packaging 3 - 34 - B4B	
				Packaging 3 - 35 - B4B	
				Packaging 3 - 36 - B4B	DAS
180 QC 21 - SA	1 pcs	11/29/19	0.00 0.00	QC 21 - SA - 21	21
				QC 21 - SA - 70	5-22
				QC 21 - SA - 53	

Part Op 100 - 1- Fill tube with sand & install plugs 407-105 on both ends as per Folio FA249 2- Turn both side of tube 3- Turn first
Descriptions: taper section on both side as per folio FA249
110 - (QC2- Inspect parts off machine FAI/FAIB)
120 - 1- Turn second taper on both side 4- Scribe part # and batch # using vibrating stylus on the cuff as per Dwg D407-
667-145 5- Ultra sound the crosstube as per FAI. "wall thickness mesurment" at given location.
130 - (QC2- Inspect parts off machine FAI/FAIB)
140 - (QC8- Inspect parts - second check)
145 - GRIND ONLY TRANSITION LINES SMOOTH LONGITUDE WAY.
150 - 1- handfinish X-TUBE INSIDE AND OUT
160 - (QC7-Inspect Chemical Conversion Coat)
170 - (Identify as per dwg & Stock Location:) LOCATION : LG014
180 - (QC21- Final Inspection - Work Order Release)

NOV 25 2019

Job BOM				
Part / Item	Component Name	Quantity	Operation	Container
D6010-115	Crosstube Material	1 pcs (1 ea)	100-Mori Seiki TL-40 - 1	F123975

Job Allocations				
Operation	Component Part	Required	Inventory	Allocated
100-Mori Seiki TL-40 - 1	D6010-115	1	106	0

Part Specifications				
Specifications could not be found.				

Plex 11/4/19 1:28 PM Dart.lajeunesse.marie



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K84 1K7
CANADA
TEL.: 1 813 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S229914



Part: D407-667-105TRN

Job No: 202844

Serial No/Batch: S229914

Revision: 0

Inspector:

Exp Date:

Instructions:

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DART AEROSPACE LTD	Work Order:	202844
Description: Crosstube Assembly	Part Number:	D407-667-145
Inspection Dwg: D407-667-145 Rev: D		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.240	✓		CNC-04	
	1.865	+0.005/-0.000	1.870	✓		CNC-08	
	1.878	+0.005/-0.000	1.883	✓		↓	
	1.970	+0.005/-0.000	1.975	✓		↓	
	2.030	+0.005/-0.000	2.035	✓		CNC-04	
	2.165	+0.005/-0.000	2.170	✓		"	
	0.125	+/-0.010	.126	✓		CNC-08	
	R0.063	+/-0.010	.063	✓		RG	
	R0.500	+/-0.010	.500	✓		↓	
	R0.063	+/-0.010	.063	✓		↓	
	4.438	+/-0.030	4.437	✓		CNC-08	
SIDE B	2.240	+0.005/-0.000	2.240	✓		CNC-04	
	1.865	+0.005/-0.000	1.870	✓		CNC-08	
	1.878	+0.005/-0.000	1.883	✓		↓	
	1.970	+0.005/-0.000	1.974	✓		↓	
	2.030	+0.005/-0.000	2.031	✓		CNC-04	
	2.165	+0.005/-0.000	2.170	✓		"	
	0.125	+/-0.010	0.127	✓		CNC-08	
	R0.063	+/-0.010	.063	✓		RG	
	R0.500	+/-0.010	.500	✓		"	
	R0.063	+/-0.010	.063	✓		"	
	4.438	+/-0.030	4.438	✓		CNC-08	
	113.20	+/-0.020	113.20	✓		Tape	

Item	Qty -145	Part Number	Description
1	X	D407-667-145	CROSSTUBE ASSEMBLY (407 HIGH FWD)
2	1	D6010-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-385	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W10	RIVET (OR NAS8302B-4-10)
9	AR	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2
10	2	AN742D38	CLAMP
11	2	MS9165-05	ANGLE BRACKET
12	2	MS21042L3	NUT (OR MS21042-3)
13	2	MS27038-1-08	SCREW
14	4	NAS1148C0332R	WASHER (OR AN880C10L)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6010-115
- 2) FINISH: FINISHED LENGTH = 113.20±0.020
CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-145" AND BATCH NUMBER ON INSIDE OF CLIFF USING VIBRATING STYLUS.
- 7) WEIGHT: 17.8 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 034.
- 12) TO INSTALL D2891-1 SUPPORT: ABRASIVE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-385 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.
- 16) MASK AREA UNDER CLAMP PRIOR TO PAINTING.
- 17) SEAL EDGES WHERE AN742D38 CLAMP MEETS WITH THE CROSSTUBE USING SIKAFLEX-241/-291 OR MIL-S-8802 CLASS B2 OR PROSEAL 890 SEALANT.
- 18) PERFORM RESISTANCE CHECK TO ENSURE MAX RESISTANCE IS 10 MILLION LBS.

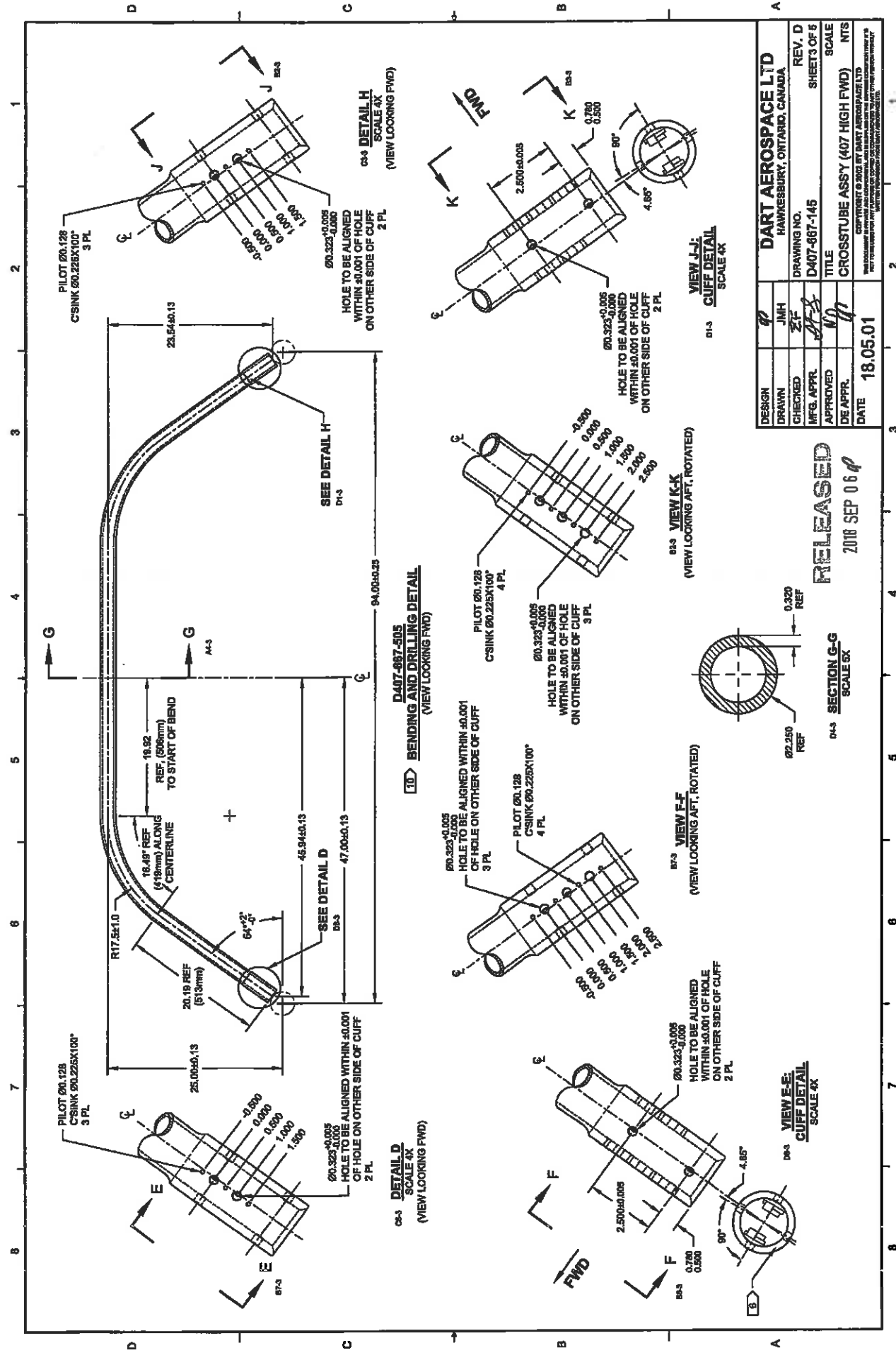
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2018 SEP 06
2018-77

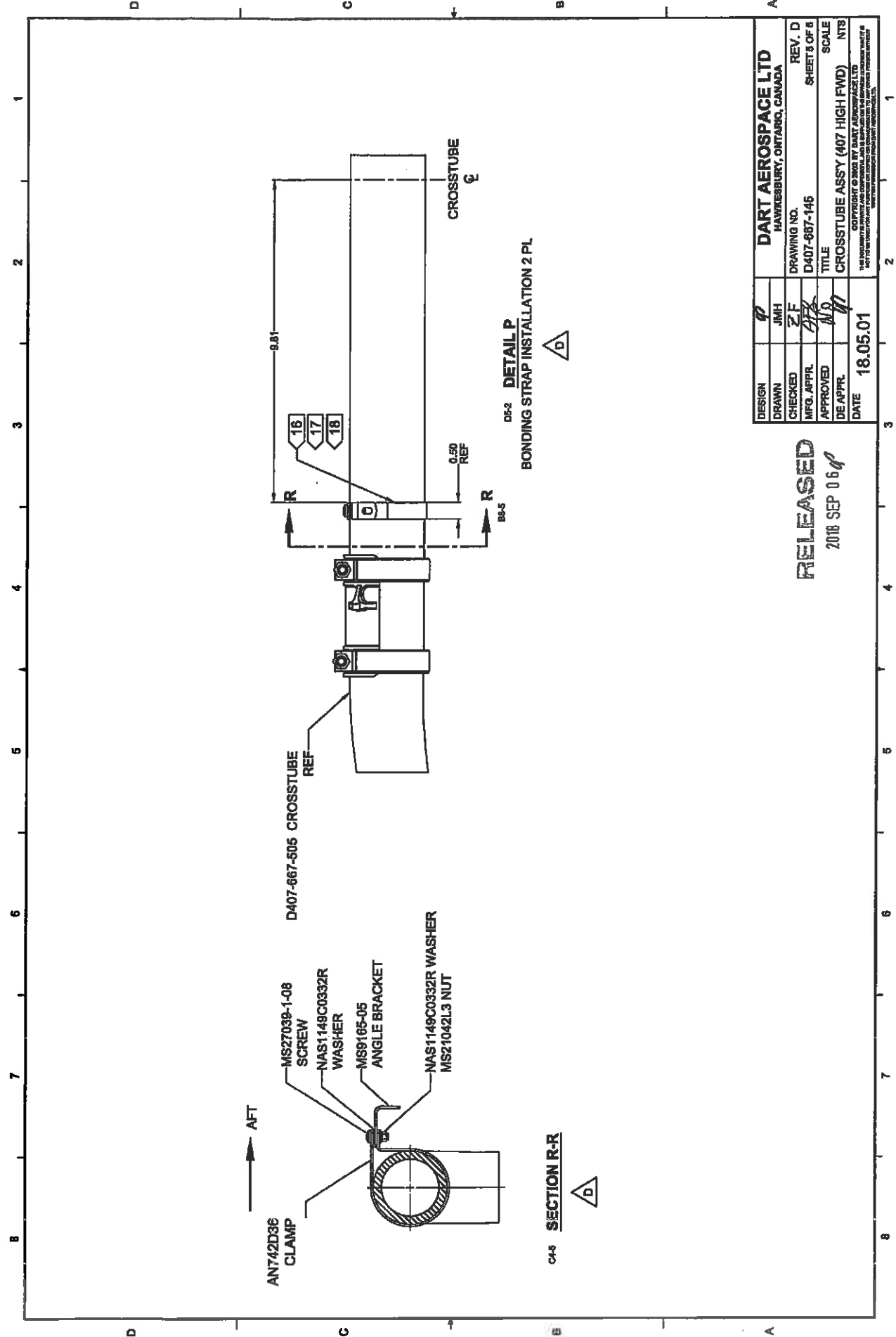
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WORK ORDER
NO. 2022844 MWS

19-11-04

D	REVISE SHEET 2 ASSEMBLY DETAIL HOLE PATTERN PER CAMEL 21. UPDATE PARTS LIST AND GENERAL NOTES 11 TO INCLUDE PARTS C-1. ADD ITEMS 10-14 TO PARTS LIST. ADD GENERAL NOTES 16-18 AND ADD SHEET 5 TO INCORPORATE DEC C-2.	JMH	18.05.01
C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-385 WAS D2895-400-894 (ZN DG-2 & AF-2); REMOVED REF. 7 ADD TOLERANCES (ZN CG-3, CH-3, DZ-9); RELOCATED FLAG #9 (ZN AS-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.08
B	ADD HOLES AND NUT PLATES FOR COMPATIBILITY WITH BHTAA SKIDTUBES	PH	05.07.28
A	NEW ISSUE	CP	02.03.08
REV.	DESCRIPTION	BY	DATE
DESIGN	JMH		
DRAWN	JMH		
CHECKED	ZF		
MFG. APPR.	PH		
APPROVED	NO		
DE APPR.	NO		
DATE	18.05.01		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWING NO. D407-667-145			
SHEET 1 OF 5			
TITLE CROSSTUBE ASSY (407 HIGH FWD)			
SCALE NTS			
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2018 SEP 06



DESIGN	φ	DART AEROSPACE LTD
DRAWN	JMH	HAWKESBURY, ONTARIO, CANADA
CHECKED	Z F	DRAWING NO.
MFG. APPR.	φ	D407-667-146
APPROVED	φ	TITLE
DE APPR.	φ	CROSSTUBE ASSY (407 HIGH FWD)
DATE	18.05.01	SCALE
		NTS

REV. D
SHEETS OF 8
CROSSTUBE ASSY (407 HIGH FWD)
SCALE
NTS

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PART OF THE DART AEROSPACE LTD. DESIGN PROCESS

Job: _____		DISPOSITION		DEPARTMENT/PROCESS											
Part No. _____		Rework ☐ Scrap ☐ Use-as-is ☐		Skid-tube ☐ Machining ☐ Large Fab ☐		Cross tube ☐ Small Fab ☐ Finishing ☐		Eng. (Non-AW) ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐		Engineering ☐ Water Jet ☐ Supplier ☐ Quality ☐					
Date :	Sequence #:	QTY Affected :		MRB (QS1042)											
Description Work Order Deviation				Disposition											
Root Cause Operator ☐ Manufacturing Process ☐ Equip/Tooling ☐ Handling/Preservation ☐ Material ☐ Product Improvement ☐ Process Improvement ☐ Human Factors ☐				FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Crushing ☐ Cracks ☐ Crimp/Kink/Ripple/Wave/Twist ☐ Marks/Chatter ☐ Mislabeled ☐ Other/Details: _____ Contamination ☐ Misaligned/off center ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Incomplete/Unclear Instructions ☐ Drill Holes ☐ Fit/Function ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain Direction ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set/Set-up ☐ Positioned Wrong ☐ Outside Tolerance ☐ Drawing ☐ Finish ☐ Part Lost/Missing ☐ Misread ☐											
												Completed By			
												Lead hand / Supervisor			
												QC / QA Coordinator			